



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,063	12/21/2001	Barret Lippey	02103-406001 / AABOSS32	2927

26161 7590 06/30/2003

FISH & RICHARDSON PC  
225 FRANKLIN ST  
BOSTON, MA 02110

EXAMINER

MAHONEY, CHRISTOPHER E

ART UNIT PAPER NUMBER

2851

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Appli ation No.

10/028,063

Applicant(s)

LIPPEY ET AL.

Examin r

Christopher E Mahoney

Art Unit

2851

-- The MAILING DATE of this communication app ars on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) 33-40 and 42-50 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 66 is/are allowed.
- 6) ☒ Claim(s) 1-25, 27, 28, 30-32, 41 and 51-64 is/are rejected.
- 7) ☒ Claim(s) 26, 29, 65, 67 and 68 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6,9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Election/Restrictions***

Applicant's election with traverse of claims 1-32, 41, and 51-68 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the examiner has not shown that the claims in each group are patentable over each other. This is not found persuasive because it is unclear by the applicants comments if the applicant is stating that claims 33-40, 42-50 are obvious in view (or the same invention as that) of claims 1-32, 41, and 51-68 or not. If the applicant is willing to concede that claims 33-40, 42-50 are obvious in view of (or the same invention as) claims 1-32, 41, and 51-68, then withdrawal of the restriction requirement/rejoinder of the claims will be considered. Additionally, should prosecution lead to patentable subject matter, the examiner will gladly work with the applicant's representative to rejoin the non elected claims upon incorporation of the patentable subject matter of the elected claims into the nonelected claims. The applicant also argues that search and examination of the entire application can be made without serious burden because prior art related to asymmetrically diffusing screens, a projector and a light projection system having a related projector and screen are *likely* to disclose subject matter which must be searched in connection with the elected claims. Possibilities and probabilities that the search may be the same is not a reason for traversal. Invention I is directed to a wavelength selective screen. Invention II is directed to an asymmetrically diffusing screen. The only common element is that they are both directed to a projection screen. The classifications of the four inventions is different. This is a prima facie case of serious burden based on the separate classification and search. See MPEP 808.02. If searching two inventions was not an undue burden because they were directed to the same generic apparatus, there would

Art Unit: 2851

be no need for subclasses within a general class. Furthermore, Inventions II and IV are directed to details of a projector, which details do not relate to the details of the wavelength selective projection screen.

The requirement is still deemed proper and is therefore made FINAL.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the bands less than about 10% of center wavelength at full width half maximum (see i.e. claim 11), and the room embracing the projector and projection screen having ambient light containing a wide band of optical wavelengths but having reduced energy in the predetermined narrow bandwidths (see i.e. claim 29) must be shown or the feature(s) canceled from the claim(s). Additionally, the applicant is respectfully requested to point out the elements of claim 41 in the drawings. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because of the following informalities:

Page 12, line 31 "this" should be --This--.

Page 13, line 6, "canb e" should be --can be--.

Page 13, line 15 the word "beised" is jumbled.

Art Unit: 2851

The applicant is respectfully requested to check if UHP is a trademark. If it is a trademark, proper notation should be included in the specification.

Appropriate correction is required.

### ***Claim Objections***

Claim 66 is objected to because of the following informalities: Claim 66 recites “ins aid” instead of “in said”. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10, 16, 20, and 64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by “such as” and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd.

Art Unit: 2851

App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 10 recites the broad recitation approximately red, green and blue respectively and the claim also recites 450-490nm, 540-570nm, and 610-650nm, respectively which is the narrower statement of the range/limitation.

It is unclear in claim 16 what applicant means by approximately 5 to 50 layers. For example, does this encompass 2 layers? Furthermore, it is unclear how a coating of 60,000nm may be obtained from 50 layers each about 200nm thick (100nm+70nm). At best this equals a total thickness of around 10,000nm.

There is a lack of antecedent basis for the source of optical energy recited in claim 20.

It is unclear in claim 64 if UHP bulbs are a trademarked type of bulb or not. If they are a trademark, then claim 64 is indefinite since trademarks generally may not be used in the claims.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by McBurney (U.S. Patent No. 1,998,054). McBurney teaches a selective reflective optical apparatus comprising a projection screen having a structure constructed and arranged to selectively reflect

Art Unit: 2851

only incident optical energy of a predetermined number of narrow bands of optical wavelengths regions (col. 2, lines 7-20). The selected bands are red (col. 2, line 7), green (col. 2, line 19), and blue (col. 2, line 18).

Claims 1-3, 6, 9-10, and 21-23, 25, 27-28, 32, 54-56, 60, 63, are rejected under 35 U.S.C. 102(b) as being anticipated by Takayama (U.S. Patent No. 5,715,083). Takayama teaches a selective reflective optical apparatus comprising a projection screen (figs. 1, 8) having a structure constructed and arranged to selectively reflect only incident optical energy of a predetermined number of narrow bands of optical wavelengths regions (figs. 6, 9). A multilayer interference layer RS, GS, BS (col. 2, line 55) reflects light in the selected bands and passes other light. (col. 2, lines 54-56). The selected bands are approximately red, green, and blue (col. 2, line 59). [The applicant should note that since only approximately red, green, and blue any teaching of red, green and blue meet the claims reciting approximate color.] A light absorbing material SBL absorbs light energy within the regions between regions other than the narrow bands] the narrow bands. (See col. 2, line 23 and col. 3, lines 6-9.) A projector P projects light in frequency regions corresponding to the narrow bands (fig. 3 and col. 3, lines 32-39). Regarding claim 60, the ambient light is filtered at/in the screen.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2851

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Jones (U.S. Patent No. 6,529,322). Takayama teaches the salient features of the claimed invention except for utilizing a paint or dye material. Jones teaches that it was known to use a paint (clm. 25) or a dye (col. 3, line 43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Jones for the purpose of utilizing readily available materials. The applicant should note that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Shanks (U.S. Patent No. 5,193,015). Takayama teaches the salient features of the claimed invention except for utilizing a black material at the back of the screen. Shanks teaches in col. 4, lines 50-51 that it was known to utilize a black material at the back of the screen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Shanks for the purpose of reducing the amount of ambient light from affecting the screen/view.

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083). Takayama discloses the claimed invention except for using a less than 10% bandwidth or 6% bandwidth. It would have been obvious to one of ordinary skill in the art at the time the invention was made to design the filters to be at less than 6% or 10% of the center bandwidth for the purpose of using an optimum or working bandwidth. The applicant



Art Unit: 2851

should note that it has been held that where the general working conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 13-14, 24, 51, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Pagis (U.S. Patent No. 5,400,174). Takayama teaches the salient features of the claimed invention except for explicitly stating that the multilayer interference filter comprises a plurality [approximately 5-50 layer] of alternating low index of refraction material [ $\text{SiO}_2$ ] and high index of refraction material [ $\text{TiO}_2$ ]. Multilayer interference filters are made by a plurality alternating low index of refraction material [ $\text{SiO}_2$ ] and high index of refraction material layers. Pagis teaches that it was known to make a multilayer interference filter comprises a plurality of alternating low index of refraction material and high index of refraction material where the low index of refraction material is  $\text{TiO}_2$  and the high index of refraction material is  $\text{SiO}_2$ . The applicant is directed to review col. 3, lines 29-35, 57, 64 and the abstract. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Pagis for the purpose of utilizing readily available materials. The applicant should note that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Pagis (U.S. Patent No. 5,400,174). Takayama in view of Pagis teaches the salient features [including approximately 5-50 layers (see col. 3, lines 29-35 of Pagis for example)] of the claimed invention except for the thicknesses of the low index of

Art Unit: 2851

refraction material being approximately 100nm and the thickness of the high index of refraction material being approximately 70nm and the overall thickness being in the range of approximately 1000-60000nm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize thicknesses of the low index of refraction material being approximately 100nm and the thickness of the high index of refraction material being approximately 70nm and the overall thickness being in the range of approximately 1000-60000nm for the purpose of optimizing the working values. The applicant should note that it has been held that where the general working conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Goto (U.S. Patent No. 6,023,369). Takayama teaches the salient features of the claimed invention except for a diffusion element comprised of lenticular elements which diffusion having a greater span in the horizontal than in the vertical. Goto teaches that it was known to provide a lenticular pattern 93 on the exit surface of a reflection screen to provide diffusion having a greater span in the horizontal than in the vertical. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Goto for the purpose of effectively utilize the reflected image light by controlling view angle.

Claims 20, 30-31, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Braun (U.S. Patent No. 5,335,022). Takayama teaches the salient features of the claimed invention except for a linear polarizer on said

Art Unit: 2851

projection screen and synchronization with polarization from a projector. Braun teaches that it was known to provide a linear polarizer on said projection screen and synchronization with polarization from a projector. The applicant is directed to review the abstract as well as col. 7, lines 22-30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Braun for the purpose of yielding high contrast without requiring darkened ambient conditions.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada (U.S. Patent No. 5,148,309) in view of Takayama (U.S. Patent No. 5,715,083). Yamada teaches the salient features of the claimed invention except for the frequency selective filter. Takeyama teaches that it was known to provide frequency selective filters SBL, BS, GS, RS. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by Takayama for the purpose of improved contrast in well lit conditions.

Claims 52-53 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of Mihalakis (U.S. Patent No. 6,375,330). Takayama teaches the salient features of the claimed invention except for the specific types of projectors used. Mihalakis teaches that DMD, liquid-crystal-on-silicon, and other types of projectors are known equivalents in the art. The applicant is directed to review col. 1, lines 11, and 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize DMD, liquid-crystal-on-silicon, or any other type of projector for the purpose of utilizing the most cost effective projection means available.

Claims 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083) in view of De Palma (U.S. Patent No. RE29091). Takayama

Art Unit: 2851

teaches the salient features of the claimed invention except for preshifted front or curved screen to compensate for the angle of incidence of light upon the screen. Figure 3 of DePalma teaches preshifted front, figure 4 shows the resultant distribution of light, and figures 18 and 19 show that the screen may be curved. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features as taught by De Palma for the purpose of a definitely controllable field through which incident radiation is redistributed, uniform radiance throughout such field, high efficiency due to a definite separation of the field of redistribution from the environmental field and due to minimum absorption losses at the redistributing surface of such devices, and a favorable rejection of radiation impinging on the device from sources other than those intended for irradiating the device.

Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. Patent No. 5,715,083). Takayama teaches the salient features of the claimed invention except for optimizing the wavelength ranges of said narrow bands for non-UHP bulbs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the wavelength ranges of said narrow bands for non-UHP bulbs for the purpose of using projectors which do not utilize a UHP bulbs. For example, a laser projector may be used. The applicant should also note that it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

***Allowable Subject Matter***

Claim 66 is allowed.

Claims 26, 29, 65 and 67-68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. For example, Young (Applied Optics 1967) teaches how to create filters of specific (optimum) performance ranges and that the cutoff falls off more steeply by adding additional IF layers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E Mahoney whose telephone number is (703) 305-3475. The examiner can normally be reached on 8:30AM-5PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (703) 308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Christopher E Mahoney  
Primary Examiner  
Art Unit 2851